

ABSTRACT

A hydrodynamic thrust bearing forming a part of a bearing system for a rotary bearing of spindle motors utilized to power hard disk drives. The thrust bearing includes at least one annular thrust plate and a counter bearing corresponding to the thrust plate. The thrust plate is firmly connected to a shaft rotatably supported by a radial bearing system. The shaft features an axial bore in the area of the thrust bearing, into which a fixing element is inserted. The fixing element is at least partially provided with a spherical surface. The element is inserted in such a way that the surface of the sphere projects slightly from the end of the shaft and rests on the counter bearing, at least when the motor is at a standstill. Therefore, when the motor is standing still or particularly during its start-up or shut-down phase, the spherical element (and not the bearing surface of the thrust plate) rests on the bearing surface of the cover plate. In this way, the wear and tear to the bearing surfaces and the moment of friction during start-up or shut-down of the motor are greatly reduced.